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AUTHOR Isaksson, Tommy
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ABSTRACT

This paper addresses some of the problems that society in general, and child care centers in particular, must confront due to the effects of the computer and mass media on the modern world. Children today live in a society increasingly dominated by computers and the mass media, and it is important that they be able to utilize these new technologies and information sources effectively. The New Information Technology at Children's Leisure Centers, or NIT project, and the Child Care in the Admass Society, or BITS project, have both worked with issues and problems relating to the effects of computers in society. The NIT project, conducted from 1985 to 1988, studied the effects of the introduction and use of computers on approximately 40 children and several instructors at 3 leisure centers, or after-school day care centers, in Sweden. Begun in 1988, the BITS project continued the study with about 75 children between 7 and 12 years of age at 4 leisure centers. Results of the study indicated that children were easier to motivate while working on the computer than at other times; writing was easier for the children on the computer than by hand; and instructors at the centers felt better supported in their role as educators and better planned their work after the computers were introduced in the centers than before. (NDR)

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Tommy Isaksson
University College of Falun/Borlänge
Box 2004
S-791 02 FALUN
Sweden

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THE BITS-PROJECT

CHILD CARE IN THE ADMASS SOCIETY

As a college of education lecturer in social sciences, teaching pre-school teachers, recreation instructors and primary school teachers I have observed that knowledge of and insight into society, its changes and its influence on our departments of education are of great importance as a means of creating a teaching environment preparing children and young people for "the real world".

The computer society

The above heading may easily give the impression that this paper will be about a time lying mainly a long way ahead, the year 2010 or so. The computer age is already here. Calculations based on the number employed put the industry in the top position in the 1930's and the white collar sector out numbered blue collar employees in the 1960's. According to an investigation by the Central Bureau of Statistics a third of all those gainfully employed today work in media and publicity professions and 25 % of all those employed have jobs involving a degree of work with computers. The computer society is already here.

In recent years, more and more people have begun to take an interest in research into the future and we have been presented with many forecasts or guesses about how society will develop. There is an obvious risk that such forecasts will act as self-fulfilling prophecies. Most people, however, seem to agree that society has reached a transition point and it is perhaps not so important whether we wish to call the new type of society capitalist, post industrial, or the admass society. There are those who argue that the opposition between labour and capital in the industrial society will be replaced by the opposition between the rich and the poor in information in the new society, and that the production of knowledge will replace the "production of products".

There are many signs that social development has reached a period of change. To mention a few: we can observe that the established political parties find it more and more difficult to recruit members, especially among the rising generation; the number of blank ballot papers is increasing; the number of electors voting for different parties in local and general elections is growing; the Greens take seats in Parliament. All this is a sign that the political parties are organizations intimately connected with the industrial society and that they are having difficulty in finding their role in a new type of society. A new society needs organizations. The union movement demands work for everybody but what are they to do when the young refuse to take just any job but claim that quality of life is very important?

One characteristic of the industrial society is the distinction made between the spheres of production and the spheres of consumption or in other words, between work and leisure. In the industrial society work in production used to be the most important factor while work for consumption (work in the home) was underrated, resulting in the differences of equality between men and women now prevailing. In the society now emerging the borderlines between work and leisure will be eradicated. The new technology today gives us opportunities to locate companies in sparsely populated areas. We can also manage part of our work from home by means of computers and the telephone system. We can also see that more and more people devote a lot of time to production in the home, for example, to baking, jam and juice making, care of the home, etc. At the same time the market for exchange of help with odd jobs is growing as is the market for informal networks aimed at providing social support on a friendly basis.

We are, thus in a period of great change but the changes do not happen of their own accord, rather is it in the interests of various groups that the changes are made in their direction. This means that computerization of an operation can either increase or reduce the influence of a certain pressure group. To take an example: computerization of the child care administration network may either increase or reduce the opportunities to influence available to the various different day care centres. This depends, among other things, on what computer systems and programs are used, what demands those who are to use the system make mainly those who superintend the centres and what influence they have had when a specification of demands was drawn up.

Working life changes all the time, debates now and then go on as to whether computerization creates unemployment, but it is impossible to give a clear cut answer to this question since we are also in the midst of structural changes in working life. It also depends on one's perspective, on whether it is a question of a single company or the whole country. How can one assess the companies which, after having computerised certain administrative routines, do not refill certain posts when someone leaves, but which would perhaps have gone bankrupt if they hadn't been able to rationalize their routines?

We know that it is mainly routine jobs that disappear in connection with computerization of an operation. This means that the woman's labour market, today already only a tenth of that available to men, will become even more limited.

There are many risks and problems linked to the increase in computerization, for example our integrity may be threatened by big population registers and computer files, the geographic concentration of people in the big city areas, computer system that create "technostress", dependence on computer systems and poor substitution routines giving computer crime/computer virus such disastrous consequences. We rely too much on technology so that we lose know-

ledge, or do not allow room for human deliberation and judgements, our "silent knowledge" disappears.

Computerization reinforces the prevailing structure - this means that an undemocratic system becomes more undemocratic with computerized routines and a democratic system becomes - or has the necessary requirements for becoming - more democratic.

It is essential that those of us working in the "gentle" sector of the community should involve ourselves in what we wish developments to look like both for ourselves, and with an eye to the future, for the children and young people with whom we work. What is technically possible, economically defensible and socially desirable? Yes, what is socially desirable is the most important question and here we have an important task in helping to answer that question. For this reason we must obtain more knowledge about computerization in the community and its consequences for children and young people.

Children in the Computer Society

Our children live in a society dominated by the mass media in which the amount of information is increasing and is chopped up into snippets so that it is difficult to see the whole and the coherence. It is important to point out the difference between information and knowledge. Information can be transmitted, while knowledge demands to be worked on and processed by the individual himself. More information does not automatically yield more knowledge, but it is difficult to acquire knowledge without information. The industrial society required children to learn to read, write and count - the three R's and discipline in terms of being punctual, and everyone doing the same thing at the same time for - large-scale production, the division of knowledge into different subjects - all in preparation for the large-scale industrial society. In the society dominated by the media, the essential thing will be to be able to think, learn, create, solve problems, to have an holistic view. To give a few examples: mental arithmetic and making rough estimates should be given a much more prominent place in mathematics teaching since we always use pocket calculators for everyday use. In the teaching of general subjects, it is more important to be able to see connections and to know how to find information. Today, you can find complete encyclopaedias recorded on small compact discs from which information can be retrieved by means of a computer. This means that when the word "Blåmes" is looked up, one doesn't only find the word coming after "Blåkulla" in the encyclopaedia, but all the other references to the word, perhaps under "Birds", "Sweden", "Jämtland" and so on. Finding information takes only a few seconds. Computer technology may also give us opportunities to individualize teaching more than previously and it may not be so self-evident that we should work with classes of 25-30 pupils, but rather with groups of varying size.

Children in the age group 9-14, spend 17 % of their day on school work and 14 % on media activities. We know also that every second

child in this age group has access to video, that children who have access to cable TV increase their total consumption of TV programmes, that children watch many programmes that are aimed at adults and that the science fiction series "V" was seen by 35 000 children between 3 and 8 years old. We should, then, concern ourselves with what children listen to, watch, read, play at as much as we worry about how they do at school, whether they have passed the test or done their homework, etc.

When we take a look at access to home computers, we see that about 4 % of the population has such a computer; 2 % of working class homes and 7 % of the homes of salaried employees have access to a home computer. Overall, it is a very limited phenomenon. But our own investigations of children from 7-10 show that 9 % of them have access to a home computer, while 75 % have some experience of computers from having tried one out, or because friends have one or parents have one at work. These figures are confirmed by another investigation showing that 75 % of the children in classes 2-6 had tried computers out while 20 % of those taking part in that investigation had computers at home. The majority of the teachers believed that the children had much less experience of computers. Home computers are more common in social classes I and II than in social class III. In addition, there are more simple home computers in working class homes while the more powerful computers that can be used for other purposes than games are to be found in the homes of white collar workers. The most common uses to which home computers are put are games and simple programming. And it is the boys and their fathers who use the computers most. In the NIT-project investigation (New information/media technology at children's leisure centres), there were twice as many girls as boys who had no experience of computers.

What responsibility does the child care service have?

An essential part of a child's development is his adaption to the norms of those around him, their values and patterns of behaviour - what in another word is called the socialization process. The socialization process varies according to where people live, to whether they come from privileged or deprived families - class specific socialization to whether they are boys or girls - sex role specific socialization. The results of the socialization process are to be seen in the degree of social competence, that is the children's ability, skill or capability in handling relations with others and being able to interact together with others. The areas of competence that children learn are those which have a "survival value" in the system of which they are a part. Children from privileged families feel more competent than children from deprived families. Boys feel more competent than girls.

The most important task of the leisure centres is to work with children and to operate in such a way that the development of social competence is facilitated especially for those children whose chances of succeeding are worse. The leisure centres must pull down the

walls separating them from the community and make it easier for the children to play a part in society. The recreation instructors have an important part to play as interpreters and transmitters of reality; this task must become more prominent in their activities. It is this primary task that distinguishes the leisure centres from school and which justifies the existence of the centres. At the same time it is one of the most important criteria for a successful cooperation with school. Children must acquire knowledge of social phenomena of various kinds they must be given the chance to adapt to society, but they must also be given help to make critical observations and, if necessary, change various phenomena. Being able to interact function in society and behave in a relevant manner does not only apply to the time spent at the leisure centre but equally to time spent at home or at school, or when they leave the leisure centres at the age of 10-12, or as adults. Working with social phenomena means that the society of the future is just as important as the present one or the past, and this means that it is as important that children should learn how people lived in the past and our traditions as about the rising information technology.

We can then observe that information technology, for better or worse, is a part of our everyday lives and especially in the reality experienced by our children. This will acquire an ever greater significance both in our working lives and in our leisure time. For this reason, it is important that the leisure centres should give children the opportunity to handle the new technology and, perhaps, find out that they have a valuable competence. Moreover, the leisure centres should give girls the same chance to use computers that boys have. In addition children from deprived homes should be given the same opportunities as children from privileged backgrounds. Since computers in the home are most often used for games and put to passive uses, the leisure centres should offer alternatives and point out different, active areas of use.

The BITS project

The projects: "New information Technology at Children's Leisure Centres" (- the NIT-project), which was run during the years 1985-1988, and "Child Care in the Admass Society" (- the BITS-project), which started in 1988 and is planned to go on until 1992, have both worked with these issues/problems. In addition, questions and reflections of a more general character have been included, such as whether there exist at all work methods and content in which the computer may act as a teaching aid, and that it is important to develop knowledge of what happens to leisure centre activities when there is a computer there. This is knowledge that cannot be transferred from the tests that have been made internationally or the Swedish tests that have been made in schools, and then primarily at secondary school level.

Our point of departure has been that the activity should function at an ordinary leisure centre where the recreation instructors themselves had no experience of computers before the project started.

The methods used in the project were tested during the period, 1985-1987, at a section of a leisure centre with about 10 children at the ages of 9-12 years. After that, the project was transferred to two other leisure centre sections with 30 seven to twelve year olds in all and as from the school year 1988-1989 the project is being run at 4 leisure centre sections in all with about 75 children. The leisure centres are on three different housing estates with different social structures: one area of blocks of flats, one mixed area and one area of private houses.

Our work method has been to work using the immediate environment as a theme for our activities. This means that the children have made interviews and investigations in the area and the results have been compiled into a magazine. The work presupposes collective planning reflection on what should be discovered, drafting questions that were typed out using the computer's word processing program. The children got in touch with the people they were to interview. At the first stage, the staff had to help out; at the second stage the children dared to go and make appointments; later they could also phone and make arrangements. The interviews were typed out in the word processing program. The children made drawings using a graphics program. They also had access to a video camera to be able to scan in pictures - on a computer screen for further revision. Facts were also collected in a data base. The children then compiled the magazine using a layout program. The magazine was printed and sold in the area. All the time the recreation instructors themselves have been in charge of the activities together with the children. One year a model of the area was made parallel with the production of the magazine. On another occasion they worked to produce an alternative Monopoly game: "Loponom". It is a cooperation game intended to increase knowledge of the housing estate; in this case, Norrmalmstorg and the prison have been replaced by private and public institutions such as Servus - a cooperative chain store - and the school. On one occasion the method was tried out on a group of 6 year-olds who were in an adjacent part-time group. At one of the leisure centre sections a couple of children who are at special school for the mentally retarded are taking part. The children have held a parent's meeting every year where they have demonstrated their prowess in the computer equipped media bus belonging to the University College. The media bus is a big bus equipped with 10 work places with computers - a computer room on wheels. There is one computer complete with printer at each leisure centre, and for the sake of clarity we can mention that there are no games programs or teaching programs. When computers have been introduced at a new section the staff have initially had strict restrictions about when and how the computer may be used, with time this restrictive attitude has relaxed since computers, after all, are a more natural phenomenon to children than for the staff. The computer has however given impetus to a discussion on educational methods. Various models for organizing the work have been tried out - on the one hand, working on the project on fixed days and at fixed times and on the other working on it when it fits naturally into the general pro-

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gramme of activities. We have also tried letting the computer stand in a separate room or in the middle of other activities, and also letting the children work individually or in groups of varying combinations.

An attempt to estimate the amount of time spent shows that the project has taken about 25 % of the children's time at the leisure centre, and of this time work at the computer has represented 10 percent.

The staff have taken part in a short course of training to use the computer programs they work with. The course has been run in the mornings; four or five meetings each lasting four hours have taken place parallel with the start of the project in the children's groups.

The staff and the leaders of the project have met regularly, every second to fourth week for tutorials in which the work has been discussed. At the start of each term, the staff have set up a teaching plan for the work; they have kept running diary notes during the term and at the end of term assessments have been made, both written and oral. During one year there was a comparison group connected to the project; they worked with the same aim on making a magazine about themselves and their environment but without using computer technology. A reference group is attached to the project, consisting of representatives from the social welfare board, social welfare service, those in charge of leisure care centres, recreation instructors and parents. The group meets once or twice a term to discuss the progress of the project. The leaders of the project also meet the child care division once or twice a term. The project forms part of the R and D project: "The Development of Knowledge of the Learning Process in Children and Young People in the Information Technology Society" - the KBI-project, run by the University College of Falun/Borlänge and results are regularly reported in the bulletins from the KBI-project. The project has attracted a lot of attention, which means that there have been many visits to the leisure centres from: teacher's groups, recreation instructors, the mass media, national radio, Russian television, the National Swedish Board of Health and Welfare, and the deputy Minister of Health and Social Affairs, among others.

During the present year we are developing methods for data communication. This means that the leisure centres have been equipped with modems and communicate with each other and those in charge of the project, by means of telephone and computer, to write letters, electronic mail, and to transmit documents of various kinds. At the moment work is in progress where the children from each leisure centre are making an "interests" data base that will be transferred by telephone so that all the sections involved will get each other's data bases, and this will form the foundation for data communication between the children and the various different leisure centres. In addition, one of the leisure centres is in touch with a Danish group of children, using the college's data network system, and during the spring, another leisure centre will be in touch with an English

children's group in a similar way. There are plans for the third centre to get in touch with a Norwegian group later in the spring.

Working with the computer has made the children easier to motivate for work on their immediate local environment; they have found work on the magazine more fun and have produced a more "professional" result.

Writing has been made easier, which has resulted in them writing more than if they had written by hand. Children with specific reading and writing disabilities have preferred to work with a word processor than on traditional writing exercises.

Because of the project, the children have acquired greater knowledge of their residential area and of computers. Their self-confidence and self-esteem has increased in the groups. One interesting observation made is that the girls in the groups have been more interested than the boys. As far as interest and involvement are concerned on the part of the children, no differences have been noticed between children from relatively deprived homes and those from privileged backgrounds.

At first the children asked if they could "play on the computer" although they knew that there were no games. After a while, they asked whether they could "write on" or "work with the computer".

The attitude of most of the parents to the project has been neutral; a few were positive and a few negative to the idea.

The staff have felt supported in the role of educators and planned their work better than before. Nothing that was considered important in the normal programme of activities has been neglected. The staff have started to reflect on and review critically the whole recreation programme and their own role in it in a more deliberate way.

The work methods employed could be a foundation on which to base close cooperation with school. The leisure centres and schools could work on an extensive theme project on the local environment and use the computer as a teaching aid. The recreation instructors could stress the development of social competence in the children while the teachers emphasize the knowledge aspect.

How much of these tendencies are due to "the charm of novelty" or are a "project result" (in that programme results improve when someone from outside is interested), and how much is the result of work methods and the computer used as a teaching aid remains to be investigated. As is so often the case, we should be careful with generalizations.

Tommy Isaksson
University College of Falun/Borlänge
Box 2004, S-791 02 FALUN SWEDEN

Telephone *46 23 819 00
Telefax *46 23 819 71